

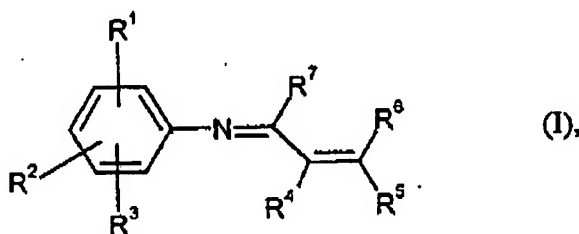
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**Amendment to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application. Please amend the claims as follows:

Claim 1. (Currently Amended) A method for reducing the aging characteristics of a rubber vulcanizate comprising admixing an anti-aging agent, ~~based on organic compounds comprising azadiene groups of the general~~ having the formula (I)



wherein

R<sup>1</sup> represents hydrogen, straight-chain or branched C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>1</sub>-C<sub>12</sub>-alkoxy-, C<sub>1</sub>-C<sub>12</sub>-alkylthio-, C<sub>1</sub>-C<sub>12</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>12</sub>-alkyl)-amino-, C<sub>6</sub>-C<sub>14</sub>-aryl-, C<sub>6</sub>-C<sub>14</sub>-aryloxy-, C<sub>6</sub>-C<sub>14</sub>-arylthio-, C<sub>6</sub>-C<sub>14</sub>-arylamino, C<sub>2</sub>-C<sub>12</sub>-heteroaryl-, C<sub>2</sub>-C<sub>12</sub>-heteroaryloxy-, C<sub>2</sub>-C<sub>12</sub>-heteroarylthio-, C<sub>2</sub>-C<sub>12</sub>-heteroarylamino,

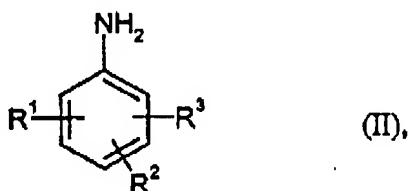
R<sup>2</sup> and R<sup>3</sup> are the same or different and represent straight-chain or branched C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>1</sub>-C<sub>12</sub>-alkoxy-, C<sub>1</sub>-C<sub>12</sub>-alkylthio-, C<sub>1</sub>-C<sub>12</sub>-alkyl-amino, di-(C<sub>1</sub>-C<sub>12</sub>-alkyl)-amino-, benzyl-, 1,1-dimethylbenzyl- or phenyl-,

or together form a 5-10-link aliphatic or aromatic, mono- or polynuclear ring system, which may optionally be interrupted once or more than once by heteroatoms selected from the group consisting of N, O and S,

R<sup>4</sup> to R<sup>7</sup> are the same or different and represent hydrogen, straight-chain or branched

C<sub>1</sub>-C<sub>12</sub>-alkyl-, C<sub>5</sub>-C<sub>12</sub>-cycloalkyl- or C<sub>6</sub>-C<sub>14</sub>-aryl-, mono- or polyunsaturated, olefinic or acetylenic, straight-chain or branched C<sub>2</sub>-C<sub>12</sub>-alkenyl-, C<sub>2</sub>-C<sub>12</sub>-alkinyl- or C<sub>5</sub>-C<sub>8</sub>-cycloalkenyl, or together form a 5-8-link, aliphatic ring system, which may optionally be interrupted once or more than once by heteroatoms selected from the group consisting of N, O and S, with at least one rubber monomer and a vulcanizing agent.

Claim 2. (Currently Amended) ~~A~~The method according to Claim 1, wherein the anti-aging agent is prepared by reacting substituted primary aromatic amines ~~of the having the~~ formula (II)



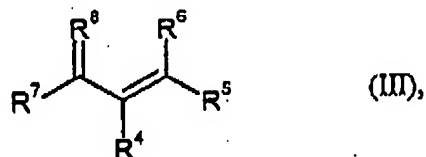
wherein,

R<sup>1</sup> represents hydrogen, straight-chain or branched C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>1</sub>-C<sub>12</sub>-alkoxy-, C<sub>1</sub>-C<sub>12</sub>-alkylthio-, C<sub>1</sub>-C<sub>12</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>12</sub>-alkyl)-amino-, C<sub>6</sub>-C<sub>14</sub>-aryl-, C<sub>6</sub>-C<sub>14</sub>-aryloxy-, C<sub>6</sub>-C<sub>14</sub>-arylthio-, C<sub>6</sub>-C<sub>14</sub>-arylamino, C<sub>2</sub>-C<sub>12</sub>-heteroaryl-, C<sub>2</sub>-C<sub>12</sub>-heteroaryloxy-, C<sub>2</sub>-C<sub>12</sub>-heteroarylthio- and C<sub>2</sub>-C<sub>12</sub>-heteroarylamino,

R<sup>2</sup> and R<sup>3</sup> are the same or different and represent straight-chain or branched C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>1</sub>-C<sub>12</sub>-alkoxy-, C<sub>1</sub>-C<sub>12</sub>-alkylthio-, C<sub>1</sub>-C<sub>12</sub>-alkyl-amino, di-(C<sub>1</sub>-C<sub>12</sub>-alkyl)-amino-, benzyl-, 1,1-dimethylbenzyl-, phenyl-,

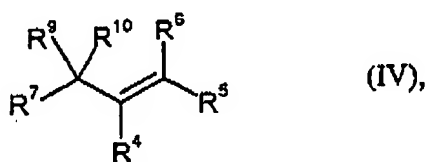
or together form a 5-10-link aliphatic or aromatic, mono- or polynuclear ring system, which may optionally be interrupted once or more than once by

heteroatoms selected from the group consisting of N, O and S, with optionally substituted conjugated 1,3-enones and/or 1,3-enals ~~of the~~ having the formula (III)



wherein,  $R^4$  to  $R^7$  are the same or different and represent of hydrogen, straight-chain or branched  $C_1$ - $C_{12}$ -alkyl-,  $C_5$ - $C_{12}$ -cycloalkyl- or  $C_6$ - $C_{14}$ -aryl-, mono- or polyunsaturated, olefinic or acetylenic, straight-chain or branched  $C_2$ - $C_{12}$ -alkenyl-,  $C_2$ - $C_{12}$ -alkinyl- or  $C_5$ - $C_8$ -cycloalkenyl, or together form a 5-8-link, aliphatic ring system, which may optionally be interrupted once or more than once by heteroatoms selected from the group consisting of N, O and S.  
and wherein  $R^8$  represents oxygen, sulfur and  $NR^4$  group

and/or their synthetic equivalents ~~of the~~ having the formula (IV)



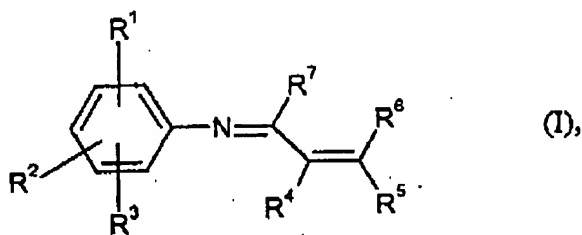
wherein,

$R^9$  and  $R^{10}$  are the same or different and represent hydroxy, chloro, bromo, straight-chain or branched  $C_1$ - $C_{12}$ -alkoxy,  $C_1$ - $C_{12}$ -alkylthio,  $C_1$ - $C_{12}$ -alkylamino or together form a  $C_2$ - $C_{12}$ -alkanedioxy- or  $C_2$ - $C_{12}$ -alkanediamino group.

Claim 3. Cancelled.

Claim 4. (Currently Amended) ~~A~~The method according to Claim 1 further comprising admixing least one additional anti-aging agent, wherein the mix ratio of anti-aging agents according to Claim 1 to at least one additional anti-aging agent is 10:1 to 1:10.

Claim 5. (Currently Amended) A rubber mixture comprising at least one rubber monomer, at least one anti-aging agent and a vulcanizing agent, ~~wherein the anti-aging agent is based on organic compounds comprising azadiene groups of the general~~having the formula (I)



wherein

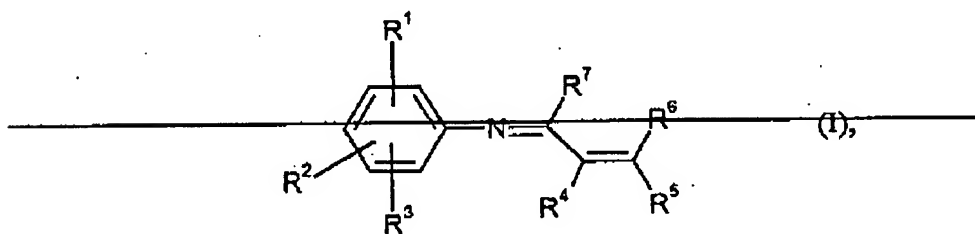
R<sup>1</sup> represents hydrogen, straight-chain or branched C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>1</sub>-C<sub>12</sub>-alkoxy-, C<sub>1</sub>-C<sub>12</sub>-alkylthio-, C<sub>1</sub>-C<sub>12</sub>-alkylamino, di-(C<sub>1</sub>-C<sub>12</sub>-alkyl)-amino-, C<sub>6</sub>-C<sub>14</sub>-aryl-, C<sub>6</sub>-C<sub>14</sub>-aryloxy-, C<sub>6</sub>-C<sub>14</sub>-arylthio-, C<sub>6</sub>-C<sub>14</sub>-arylamino, C<sub>2</sub>-C<sub>12</sub>-heteroaryl-, C<sub>2</sub>-C<sub>12</sub>-heteroaryloxy-, C<sub>2</sub>-C<sub>12</sub>-heteroarylthio-, C<sub>2</sub>-C<sub>12</sub>-heteroarylamino,

R<sup>2</sup> and R<sup>3</sup> are the same or different and represent straight-chain or branched C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>1</sub>-C<sub>12</sub>-alkoxy-, C<sub>1</sub>-C<sub>12</sub>-alkylthio-, C<sub>1</sub>-C<sub>12</sub>-alkyl-amino, di-(C<sub>1</sub>-C<sub>12</sub>-alkyl)-amino-, benzyl-, 1,1-dimethylbenzyl- or phenyl-,

or together form a 5-10-link aliphatic or aromatic, mono- or polynuclear ring system, which may optionally be interrupted once or more than once by heteroatoms selected from the group consisting of N, O and S,

$R^4$  to  $R^7$  are the same or different and represent hydrogen, straight-chain or branched  $C_1$ - $C_{12}$ -alkyl-,  $C_5$ - $C_{12}$ -cycloalkyl- or  $C_6$ - $C_{14}$ -aryl-, mono- or polyunsaturated, olefinic or acetylenic, straight-chain or branched  $C_2$ - $C_{12}$ -alkenyl-,  $C_2$ - $C_{12}$ -alkinyl- or  $C_5$ - $C_8$ -cycloalkenyl, or together form a 5-8-link, aliphatic ring system, which may optionally be interrupted once or more than once by heteroatoms selected from the group consisting of N, O and S.

Claim 6. (Currently Amended) A process for preparing ~~a the~~ rubber mixture according to Claim 5, comprising mixing the at least one or more rubber monomer with ~~an the~~ anti-aging agent and a the vulcanizing agent, ~~wherein the anti-aging agent is based on organic compounds comprising azadiene groups of the general formula (I)~~



wherein

$R^1$  — ~~represents hydrogen, straight-chain or branched  $C_4$ - $C_{12}$ -alkyl,  $C_4$ - $C_{12}$ -alkoxy,  $C_4$ - $C_{12}$ -alkylthio,  $C_4$ - $C_{12}$ -alkylamino, di- ( $C_4$ - $C_{12}$ -alkyl) amine,  $C_6$ - $C_{14}$ -aryl,  $C_6$ - $C_{14}$ -aryloxy,  $C_6$ - $C_{14}$ -arylthio,  $C_6$ - $C_{14}$ -arylamino,  $C_2$ - $C_{12}$ -heteroaryl,  $C_2$ - $C_{12}$ -heteroaryloxy,  $C_2$ - $C_{12}$ -heteroarylthio,  $C_2$ - $C_{12}$ -heteroarylamino,~~

~~R<sup>2</sup> and R<sup>3</sup> are the same or different and represent straight chain or branched C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>1</sub>-C<sub>12</sub>-alkoxy, C<sub>1</sub>-C<sub>12</sub>-alkylthio, C<sub>1</sub>-C<sub>12</sub>-alkyl-amino, di-(C<sub>1</sub>-C<sub>12</sub>-alkyl)-amino, benzyl, 1,1-dimethylbenzyl or phenyl,~~

~~or together form a 5-10-link aliphatic or aromatic, mono or polynuclear ring system, which may optionally be interrupted once or more than once by heteroatoms selected from the group consisting of N, O and S,~~

~~R<sup>4</sup> to R<sup>7</sup> are the same or different and represent hydrogen, straight chain or branched C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>5</sub>-C<sub>12</sub>-cycloalkyl or C<sub>6</sub>-C<sub>14</sub>-aryl, mono or polyunsaturated, olefinic or acetylenic, straight chain or branched C<sub>2</sub>-C<sub>12</sub>-alkenyl, C<sub>2</sub>-C<sub>12</sub>-alkinyl or C<sub>6</sub>-C<sub>8</sub>-cycloalkenyl, or together form a 5-8-link, aliphatic ring system, which may optionally be interrupted once or more than once by heteroatoms selected from the group consisting of N, O and S.~~

Claim 7. Cancelled.

Claim 8. (New) The process according to Claim 1, wherein the anti-aging agent is (a) 1-N-(4'-N'-phenylamino-1'-phenyl)-2-methyl-1-azabuta-1,3-diene, (b) 1-N-(4'-N'-phenylamino-1'-phenyl)-2,4-dimethyl-1-azapenta-1,3-diene, (c) 1-N-(4'-N'-phenylamino-1'-phenyl)-1-azapenta-1,3-diene, (d) 1-N-(4'-N'-phenylamino-1'-phenyl)-1-azabuta-1,3-diene, (e) 1-N-(4'-N'-phenylamino-1'-phenyl)-3,5,5-trimethyl-1-azamethylenecyclohex-2-ene, (f) 1-N-(4'-N'-phenylamino-1'-phenyl)-1-azamethylenecyclohex-2-ene, (g) 1-N-(4'-N'-phenylamino-1'-phenyl)-4-phenyl-1-azabuta-1,3-diene, or (h) combination thereof.

Claim 9. (New) The rubber mixture according to Claim 5, wherein the anti-aging

agent is (a) 1-N-(4'-N'-phenylamino-1'-phenyl)-2-methyl-1-azabuta-1,3-diene, (b) 1-N-(4'-N'-phenylamino-1'-phenyl)-2,4-dimethyl-1-azapenta-1,3-diene, (c) 1-N-(4'-N'-phenylamino-1'-phenyl)-1-azapenta-1,3-diene, (d) 1-N-(4'-N'-phenylamino-1'-phenyl)-1-azabuta-1,3-diene, (e) 1-N-(4'-N'-phenylamino-1'-phenyl)-3,5,5-trimethyl-1-azamethylenecyclohex-2-ene, (f) 1-N-(4'-N'-phenylamino-1'-phenyl)-1-azamethylenecyclohex-2-ene, (g) 1-N-(4'-N'-phenylamino-1'-phenyl)-4-phenyl-1-azabuta-1,3-diene, or (h) combination thereof.

Claim 10 (New) The process according to Claim 6, wherein the anti-aging agent is (a) 1-N-(4'-N'-phenylamino-1'-phenyl)-2-methyl-1-azabuta-1,3-diene, (b) 1-N-(4'-N'-phenylamino-1'-phenyl)-2,4-dimethyl-1-azapenta-1,3-diene, (c) 1-N-(4'-N'-phenylamino-1'-phenyl)-1-azapenta-1,3-diene, (d) 1-N-(4'-N'-phenylamino-1'-phenyl)-1-azabuta-1,3-diene, (e) 1-N-(4'-N'-phenylamino-1'-phenyl)-3,5,5-trimethyl-1-azamethylenecyclohex-2-ene, (f) 1-N-(4'-N'-phenylamino-1'-phenyl)-1-azamethylenecyclohex-2-ene, (g) 1-N-(4'-N'-phenylamino-1'-phenyl)-4-phenyl-1-azabuta-1,3-diene, or (h) combination thereof.